UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/974,555	10/09/2001	Jeffrey J. Walls	10008320-1	7156

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HEWLETT-PACKARD COMPANY	MADAMBA, GLENFORD J
Intellectual Property Administration	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

	Application No.	Applicant(s)
Office Action Summary	09/974,555	WALLS ET AL.
	Examiner	**Art Unit**	
	Glenford Madamba	2151	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>15 June 2007</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-19</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-19</u> is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application

6)☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1, 3, 5-8, 10, and 12-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludtke et al (hereinafter Ludtke). U.S. Patent 6,501,441 in view of Jenkin et al (hereinafter Jenkin), U.S. Patent 6,118,433.

As per claims 1, 8 and 17, Ludtke in view of Jenkin discloses a method for configuring a plurality of networked slave computers (24-40) to cooperate to collectively render a display comprising [Abstract]:

specifying, at a master computer (22), compatible operating configuration for each of the plurality of slave computers [Col 3, Lines 27-33] [Figs. 2-4];

communicating, across the network (e.g., high-speed serial interface) [Col 23 Lines 56-58], the specified configuration to each of the plurality of slave computers [Col 19, Lines 53-66] [Col 24, Lines 27-28] [Fig. 2]; and

configuring graphics circuits of the plurality of networked slave computers in

accordance with the compatible operating configuration to cooperate to collectively

render a display, wherein the compatible operating configuration specifies a particular

display operating mode.

Further, with regards to the claim, while Ludtke discloses substantial features of

the invention such as the method of claim 1, and a method for configuring a plurality of

networked slave computers to cooperate to collectively render a display [Fig. 2], he

does not expressly disclose the additionally recited feature of configuring graphics

circuits of the plurality of networked slave computers in accordance with the compatible

operating configuration to cooperate to collectively render a display, wherein the

compatible operating configuring specifies a particular display operating mode. The

feature is disclosed by Jenkin in a related endeavor.

Jenkin discloses as his invention a video surface constructed by adjoining a large

number of flat screen display devices together. Each screen on this surface is

controlled by its own computer processor and these processors are networked together

[Abstract] [Figs. 2 & 5-7]. In particular, Lech discloses the additional recited feature of

configuring graphics circuits (e.g., graphics processors of the display units {DUs} of the

plurality of networked slave computers in accordance with the compatible operating

configuration to cooperate to collectively render a display [col 1, L10-20] (i.e., via

graphical display commands) [col 4,L52-59], wherein the compatible operating

configuring specifies a particular display operating mode (e.g., operating under a

"monochrome", "greyscale", or "color" display) [col 2, L1 – col 3, L10] [col 4, L21 – col 5, L27] [Figs. 8 & 9].

It would thus be obvious to one of ordinary skill in the art at the time of the invention to combine and/or modify Ludtke's invention with the above added feature, as disclosed by Jenkin, for the motivation of providing a video display, and in particular, for construction of a 'large' video display unit capable of supporting user interaction [col 1, L1-8].

In considering Claim 8, in addition to the reasons cited above for claim 1, Ludtke points out that the configuration provided in Figure 2 is exemplary only and that it is apparent that an audio/video network could include many different combinations of components [Col 8, Lines 29-31]. It is inherent that the invention can therefore be applied to expanded versions of the network configuration illustrated, such as pluralities of the described network configuration. In fact, Ludtke teaches in the embodiment of his invention that a *parameter configuration_ID* is used to specify which particular multiple display configuration is being configured, assuming the master device (22) supports more than one multiple display configuration [Col 20, Lines 41-43].

Claim 17 is also rejected for the same reasons provided as it differs only by its statutory category.

As per claims 3, 10 and 18, Ludtke (in view of Jenkin) discloses the method of claim 1, wherein the step of communicating the specified configuration comprises saving at least one slave configuration file in a predetermined location on each of the plurality of slave computers.

In one of his claims for the invention [Col 25, Lines 40-46], Ludtke discloses a method that has as one of its steps, transmitting each scaled image section to each appropriate display device, wherein the step of transmitting each scaled image section includes combining data representing the scaled image section for an appropriate display device in a stream of data packets, *each including an address value corresponding to a memory location within the appropriate display device.* Further, Ludtke discloses a method wherein a trigger packet, which includes a trigger bit, is sent and signals that storage of a current scaled image for display by the appropriate display device is complete   [Col 25, Lines 65-67 & Col 26, Lines 1-2].

Claims 10 and 18 are also rejected in that they make the same assertion as Claim 3 and are differentiated only by their statutory category.

As per claims 5, 6, 12, 13 and 15, Ludtke (in view of Jenkin) discloses the method of claim 1, wherein the step of specifying, at a master computer, operating configurations further comprises the step of reading, by the master computer, a master configuration file that is stored in a predetermined location.

Claim 6 declares the method of claim 5, wherein the step of specifying, at a

master computer, operating configurations further comprises the step of translating

information from the master configuration file and saving the translated information into

a plurality of slave configuration files.

In considering Claims 5 and 6, Ludtke specifies a multiple display configuration

system comprised, in part, by:

a master device coupled to the plurality of display devices comprising:

    i.   a master communications circuit configured for receiving and

transmitting data; and

    ii.   a control circuit coupled to the master communications circuit for

partitioning an image into a plurality of image sections each corresponding

to one of the display devices and assigning each image section to a

corresponding display device.

[Col 26, Lines 38-46].

Ludtke additionally points out as a preference that management support and

controls for the multiple display configuration are exposed to control devices on the

serial bus network, *allowing the control devices to issue commands to the master*

device concerning the configuration of the multiple display configuration [Col 19, Lines

53-66]. As shown in Figure 3 for the reference (Ludtke), the master device has memory

components (i.e., main memory, video memory, and mass storage) for storage of control commands/specifications received from control devices to which it is coupled.

The steps of capturing and scaling each image section are performed by a master device (22) on each appropriate image section [Col 24, Lines 38-39, Col 25 Lines 34-39] before each data stream is transmitted to the appropriate display device.

Claims 12, 13, and 15 are also rejected in that they make the same assertion as Claims 5 and/or Claim 6, and are differentiated only by their statutory category.

As per claims 7, 14 and 16, Ludtke (in view of Jenkin) discloses the method of claim 5, wherein the step of specifying, at a master computer, operating configurations further comprises the step of translating information from the master configuration file and communicating the translated information to the plurality of slave computers.

Ludtke, in his preferred embodiment teaches that a *configure command* is utilized by a control device to initially set up a multiple display configuration and to change an existing multiple display configuration [Col 19 Lines 63-66]. The master device (22) issues the appropriate commands to each display device (24-40) to set each display device to the appropriate resolution before the master device (22) configures the display devices (24-40) for the multiple display configuration [Col 20, Lines 26-29]. A subsequent configuration command using the same identification value

(parameter configuration_ID) would cause a change to the specified multiple display configuration [Col 20, Lines 47-49].

Ludtke also teaches in an alternative embodiment that given an original data stream (video stream) the master device *decodes* the frame data, partitions the image data into each image section corresponding to each display device, scales the image data, *re-encodes* the scaled image data for each image section on separate isochronous streams and *transmits* the encoded and scaled image data for each image section on separate isochronous channels, one directed to each of the display devices, as appropriate. The display devices (24-40) then display the encoded and scaled image data at an appropriate time, as specified by the master device (22) [Col 22, Lines 42-53].

Claims 14 and 16 are also rejected in that they make the same assertion as Claim 7 and are differentiated only by their statutory category.

3. Claims 2, 9 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ludtke et al (hereinafter Ludtke). U.S. Patent 6,501,441 in view of Jenkin et al (hereinafter Jenkin), U.S. Patent 6,118,433 and in futher view of Lavelle, U.S. Patent 6,875,322 B2.

As per claims 2, 9 and 19, Ludtke in view of Jenkin and in further view of Lavelle discloses the method of claim 1, wherein the step of communicating the specified configuration comprises communicating the specified configuration through a communication socket of each of the plurality of slave computers, and wherein the particular display operating mode is a stereo mode.

Ludtke discloses a multiple display configuration system comprising, in part, of a display communications circuit configured for receiving and transmitting data [Col 26, Lines 24-27].

While the combination of Ludtke and Jenkin disclose substantial features of the invention such as the method of claim 1, and a method for configuring a plurality of networked slave computers to cooperate to collectively render a display [Fig. 2], including communicating the specified configuration comprises communicating the specified configuration through a communication socket of each of the plurality of slave computers (e.g., via video drivers) [Jenkin: col 3, L8], the combination does not expressly disclose the additionally recited feature of communicating the specified configuration through a communication socket of each of the plurality of slave computers, and wherein the particular display operating mode is a stereo mode. The feature is disclosed by Lavelle in a related endeavor.

Lavelle discloses as his invention a graphics system including a hardware accelerator and a frame buffer. The frame buffer includes a sample storage area and a

double-bufferred display pixel area. The hardware accelerator is operable to (a) render a stream of primitives into samples, (b) store the samples into the sample storage area of the frame buffer, (c) read the samples from the sample storage area, (d) filter the samples to generate pixels, and (e) store the pixels into a first buffer of the display pixel area of the frame buffer. Furhtermore, the hardware accelerator is operable to perform (a) through (e) and one or more times on one or more corresponding streams of primitives to complete a frame of an animation before passing control of the first buffer to a video output processor [Abstract]. In particular, Lavelle discloses the additional recited feature of communicating the specified configuration through a communication socket of each of the plurality of slave computers, and wherein the particular display operating mode is a stereo mode (e.g., "Stereo Display") [Fig. 22].

It would thus be obvious to one of ordinary skill in the art at the time of the invention to modify the combination of Ludtke and Jenkin with the above additional feature, as disclosed by Lavelle, for the motivation of providing a graphics computing system for dynamically adjusting a number of rendering passes to achieve a targeted quality constraint [col 1, L15-20].

Claims 9 and 19 are also rejected for the same reason cited above as they differ only by their statutory category.

4. Claims 4 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over

Ludtke et al (hereinafter Ludtke). U.S. Patent 6,501,441 in view of Jenkin et al

(hereinafter Jenkin), U.S. Patent 6,118,433 and in futher view of Obviousness.

As per claims 4 and 11, Ludtke in view of Jenkin and in futher view of Obviousness

discloses the method of claim 3, wherein the step of saving at least one configuration

file comprises saving the at least one slave configuration file using a predetermined

filename.

In considering Claim 4, it would be obvious to one of ordinary skill to ascertain

from the teachings of Ludtke that the transmittal of encoded data packets to an address

corresponding to a memory location within each one of the display devices in the

multiple display configuration would be contained in some standard file format (i.e.,

MPEG or DV file) with a predetermined filename as its identifier [Col 25, Lines 61-64].

Claim 11 is also rejected for the same reason provided as it differs only by its

statutory category.

Conclusion

1. The Examiner has cited particular columns and line numbers in the references applied to the claims above for the convenience of the applicant. Although the specified citations are representative of the teachings of the art and are applied to specific limitations within the individual claim, other passages and figures may apply as well. It is respectfully requested from the applicant in preparing responses, to fully consider the references in entirety as potentially teaching all or part of the claimed invention, as well as the context of the passage as taught by the prior art or disclosed by the Examiner.

2. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Greaves   Patent No.: US 6195687 B1

Greaves et al, Patent No. 6195687, discloses a master-slave network control system and method of operation wherein the master node element has substantially absolute invasive control over functions and capabilities of slave node elements (i.e., *"functions, configuration and capabilities of the slave node elements"*) which are logged onto the network and wherein the master node can exercise latent control over slave node elements when not logged onto the network.

3. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenford Madamba whose telephone number is 571-272-7989. The examiner can normally be reached on M-F 8:30-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Valencia Wallace Martin can be reached on 571-272-3440. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Glenford Madamba
Examiner
Art Unit 2151

VALENCIA MARTIN-WALLACE
PRIMARY EXAMINER